Listing of Claims:

Claim1.(Currently amended). While a conventional Dissolved Air Flotation ~~flotation~~ treatment of water for drinking or for any other purpose from polluting agents or contaminants comprises:

a. ~~an addition of surfactants to said water in order to stabilize later gas bubbles~~
an optional addition of surfactants-promoters of flotation to said water aimed to stabilize future gas bubbles

b. ~~an optional addition of surfactants-promoters of flotation to said water~~
an addition of surfactants to said water
said addition aimed to stabilize in the future formed within said water gas bubbles

c. ~~a formation of said gas bubbles within said water~~
an appearance and growth of small gas bubbles within said water
said small gas bubbles originate from dissolved gas molecules present in either said water or a part of water added to said water

d. ~~further~~ a stabilization and stop of growth of said small gas bubbles caused by said surfactants adsorption

((d)) e. a collection of contaminants by an adhesion to stabilized said small gas bubbles

((e)) f. a slow rise of stabilized said small gas bubbles with attached said contaminants to a top of said water

((f)) g. a froth formation on said top of said water
said froth containing collected and removed from said water contaminants

((g)) h. an eventual removal of said froth for further treatment

wherein a claimed method of water treatment from polluting agents or contaminants for drinking or for any other purpose:
omits an addition of surfactants to said water aimed to stabilize later formed within said water gas bubbles and
comprises:

((a)) j. an optional addition of surfactants-promoters of flotation to said water

((b)) i. ~~a formation of said gas bubbles within said water~~
an appearance and growth of small gas bubbles within said water
said small gas bubbles originate from dissolved gas molecules present in either said water or a part of water added to said water

((c)) k. a collection of said contaminants by an adhesion to said small gas bubbles

((d)) l. a fast rise of ~~said gas bubbles with said pollutants attached~~ continuing to grow these initially small gas bubbles with said ~~pollutant~~ contaminants attached to a top of said water
wherein said gas bubbles decay and release said contaminants

((e)) m. an accumulation of said contaminants within a top water layer

~~wherein said gas bubbles formation within said water results from any of the following:~~

~~f. previously dissolved within said water under normal atmospheric pressure gas means said gas bubbles formation is caused by stirring, or disturbances, or any other turbulences within said water~~

~~g. a pressurization depressurization cycle means in said pressurization depressurization cycle gas is initially dissolved within said water under a substantial pressure and a formation of said gas bubbles is caused by later said substantial pressure decrease~~

~~h. some chemicals addition to said water means said chemicals cause a reaction within said water in said chemical reaction gas molecules are released into said water~~

~~i. by any combination of said turbulences, pressurization depressurization cycle, and chemical reaction within said water~~

whereby comparing to a ~~flotation~~ Dissolved Air Flotation the claimed ~~process~~ method:
substantially ~~increases a speed of contaminants removal from a body of the treated water~~ decreases an overall cost of water treatment
because the contaminants are removed from a bulk of the treated water without surfactants addition while these surfactants addition contributes a major part of water treatment cost

and overcomes a productivity problem of the DAF method thus allowing to treat large volumes of water because of the continuation of growth of said gas bubbles and their rapid rise to the surface.

Claim 2. (Withdrawn) A Separator to separate said top water layer with delivered and released contaminants in the process claimed by the Claim 1

means said Separator prevents or reduces a mixing of said top water layer with underlying water layers

whereby said Separator makes a process of said top water layer further treatment easier.

Claim 3. (Withdrawn) A Separator to separate said top water layer as it is claimed by the Claim 2 means said Separator allows said gas bubbles to rise through said Separator but said Separator prevents or reduces a turbulent mixing of said top water layer with underlying water layers

whereby said Separator enables said top layer to be immobilized or to move slowly comparing to said water thus allowing a further concentration of removed contaminants within said top water layer.

Claim 4. (Canceled) A method to treat water by a Separator claimed by the Claim 3 for a flotational treatment of said top water layer

means said gas bubbles within said Separator are stabilized by surfactants addition and collected by said gas bubbles contaminants are later removed from said water with froth.

Claim 5. (Original). A process as it is claimed by the Claim 1 wherein said top water layer enriched with said contaminants is separated and removed from a main body of said water for further treatment by any known method.

Claim 6. (Original). A process as it is claimed by the Claim 1 wherein accumulated within said top water layer contaminants further aggregate together and later said aggregated contaminants return to said water

whereby making a process of said water further treatment easier.

Claim 7 (Currently amended). A process as it is claimed by the Claim 1 wherein accumulated within said top water layer said contaminants further aggregate together and said top water layer is later removed with these aggregated contaminants for further treatment <u>by any known method</u>

whereby making a process of said top water layer further treatment easier.

Claim 8 (Currently amended). A process as it is claimed by the Claim 1 wherein

accumulated within said top water layer said contaminants further aggregate together and these aggregated contaminants continue to grow in size until eventually large flocks of contaminants are formed

said flocks of contaminants further precipitate to either a bulk of said water or ~~to any designated site of accumulation~~ at least partly to a bottom of said water forming a precipitate at the water bottom

and said flocks or precipitate or any combination of said flocks and precipitate are later removed by any known method from either a bulk of said water or from said water bottom or both from the bulk and said water bottom for further treatment.

Claim 9. (Withdrawn) A Separator to separate precipitating flocks of contaminants in the process claimed by the Claim 8

means said Separator allows said gas bubbles to rise through said Separator but said Separator prevents or reduces a turbulent mixing of said top water layer with underlying water layers
and said Separator collects precipitated flocks of contaminants

whereby said Separator does not allow said precipitated flocks of contaminants to return to said main water body and thus makes a process of further removal of said precipitated flocks of contaminants easier.

Claim 10. (Withdrawn) An Apparatus for a continuous treatment of water by the method claimed in the Claim 1, or by a Gas Assisted Flotation, or by a Dissolved Air Flotation

said Apparatus comprising one or more of not necessarily vertical shafts, pipes, tunnels, chambers, or any other similar vessels said water eventually flows by, said vessel or vessels constitute a flotation Unit with a water tower within said flotation Unit,

said water initially contains dissolved under a substantial pressure gas

and said water enters a lower part of said flotation Unit and rises by flowing through said water tower, and said water within said water tower maintains a substantial pressure at a bottom of said flotation Unit

means while said water rises by moving through said flotation Unit the pressure within said water decreases and causes gas bubbles formation within said flotation Unit from previously dissolved gas molecules

and within said flotation Unit said contaminants are attached to said gas bubbles, said gas bubbles further rise and take contaminants with them, and deliver these attached contaminants to a top water layer

whereby contaminants are removed from a main water body .and a productivity of this Apparatus allows to treat large volumes of water.

Claim 11. (Withdrawn) An Apparatus as it is claimed by the Claim 10 wherein said water prior to entering said flotation Unit enters and later flows by some Gas Dissolution Unit

means within Gas Dissolution Unit molecules of said gas are dissolved within said water under a predetermined pressure

and an exit of said Gas Dissolution Unit is connected to an entrance of said flotation Unit either directly or through some connecting shaft, tunnel, pipe or a plurality of any vessels said water flows by

whereby making it possible to treat pressurized water without a substantial concentration of dissolved gas within said water.

Claim 12 (Withdrawn) An Apparatus as it is claimed by the Claim 11 wherein only a first part of said water flows through said Gas Dissolution Unit

wherein another part of said water is mixed with said first part only after said first part leaves said Gas Dissolution Unit and prior to a rise of said water through said flotation Unit

whereby increasing a volume of treated water.